

WHAT IS CLAIMED IS:

1. A transmission apparatus for converting digital data into a packet and transmitting said packet-converted digital data, said transmission apparatus comprising:

insertion means for inserting random data into a part of said packet-converted digital data to be transmitted;

encryption means for encrypting said packet-converted digital data including said random data inserted by said insertion means; and

transmission means for transmitting said digital data encrypted by said encryption means.

2. A transmission apparatus according to claim 1 wherein said transmission means transmits said encrypted digital data to other equipment by radio or wire communication.

3. A transmission apparatus according to claim 1 wherein said transmission means transmits said encrypted digital data as data to be recorded onto a recording medium.

4. A transmission apparatus according to claim 1 wherein said insertion means inserts said random data into an invalid-data portion existing in said packet.

5. A transmission apparatus according to claim 1

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wherein the length of an encryption unit encrypted by said encryption means is smaller than the length of said packet-converted digital data.

6. A transmission apparatus according to claim 5 wherein said insertion means inserts said random data into said encryption unit.

7. A reception apparatus for receiving encrypted digital data including random data in each packet, said reception apparatus comprising:

reception means for receiving encrypted packet-converted digital data;

decryption means for decrypting said encrypted packet-converted digital data received by said reception means; and

elimination means for removing random data from packet-converted digital data obtained as a result of decryption carried out by said decryption means.

8. A reception apparatus according to claim 7 wherein said reception means receives said encrypted digital data from other equipment by radio or wire communication.

9. A reception apparatus according to claim 7 wherein said reception means receives said encrypted digital data recorded on a recording medium.

10. A reception apparatus according to claim 7

wherein said elimination means eliminates said random data by removing an invalid-data portion existing in said packet.

11. A reception apparatus according to claim 7 wherein the length of a decryption unit decrypted by said decryption means is smaller than the length of said packet-converted digital data.

12. A reception apparatus according to claim 11 wherein said elimination means eliminates said random data from said decryption unit.

13. A transmission method for converting digital data into a packet and transmitting said packet-converted digital data, said transmission method comprising the steps of:

inserting random data into a part of said packet-converted digital data to be transmitted;

encrypting said packet-converted digital data including said inserted random data; and

transmitting said encrypted digital data.

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A3 } 14. A transmission method according to claim 13 wherein the length of an encryption unit to be encrypted is smaller than the length of said packet-converted digital data and said random data is inserted into said encryption unit.

15. A reception method for receiving encrypted digital data including random data in each packet, said reception method comprising the steps of:

receiving encrypted packet-converted digital data;
decrypting said received encrypted packet-converted digital data; and

removing random data from packet-converted digital data obtained as a result of decrypting said received encrypted packet-converted digital data.

16. A reception method according to claim 15 wherein the length of a decryption unit to be decrypted is smaller than the length of said packet-converted digital data and said random data is removed from said decryption unit.

17. A transmission apparatus for encrypting a program comprising a continuous data stream and transmitting said encrypted program, said transmission apparatus comprising:

random-data-generating means for generating random data;

addition means for adding said random data generated by said random-data-generating means to the beginning and the end of said program;

encryption-processing means for encrypting said

program including said random data added thereto by said addition means; and

transmission means for transmitting said program encrypted by said encryption-processing means.

18. A transmission apparatus according to claim 17 wherein said transmission means transmits said encrypted digital data to other equipment by radio or wire communication.

19. A transmission apparatus according to claim 17 wherein said transmission means transmits said encrypted digital data as data to be recorded onto a recording medium.

20. A transmission apparatus according to claim 17 wherein the data length of said random data generated by said random-data-generating means is variable.

21. A reception apparatus for receiving an encrypted program comprising a continuous data stream, said reception apparatus comprising:

reception means for receiving said encrypted program comprising a continuous data stream;

decryption means for decrypting said encrypted program comprising a continuous data stream received by said reception means; and

elimination means for removing random data from the

beginning and the end of a program obtained as a result of decryption carried out by said decryption means.

22. A reception apparatus according to claim 21 wherein said reception means receives said encrypted digital data from other equipment by radio or wire communication.

23. A reception apparatus according to claim 21 wherein said reception means receives said encrypted digital data recorded on a recording medium.

24. A reception apparatus according to claim 21 wherein the data length of said random data removed by said elimination means is variable.

25. A transmission method for encrypting a program comprising a continuous data stream and transmitting said encrypted program, said transmission method comprising the steps of:

generating random data;

adding said generated random data to the beginning and the end of said program;

encrypting said program including said added random data; and

transmitting said encrypted program.

26. A reception method for receiving an encrypted program comprising a continuous data stream, said

reception method comprising the steps of:

receiving said encrypted program comprising a continuous data stream;

decrypting said received encrypted program comprising a continuous data stream; and

removing random data from the beginning and the end of a program obtained as a result of decrypting said received encrypted program.

27. A transmission apparatus for encrypting a plurality of data blocks comprising main data and additional data and transmitting said encrypted data blocks, said transmission apparatus comprising:

additional-data-inserting means for carrying out processing to insert additional data into data blocks selected at random among a sequence of said data blocks composing a stream of said main data;

encryption means for encrypting said sequence of data blocks after said processing carried out by said additional-data-inserting means to insert additional data; and

transmission means for transmitting said sequence of data blocks encrypted by said encryption means.

28. A transmission apparatus according to claim 27 wherein:

there is further provided random-data-inserting means for carrying out processing to insert random data into some of said data blocks; and

said encryption means encrypts said sequence of data blocks after said processing carried out by said additional-data-inserting means to insert additional data and said processing carried out by said random-data-inserting means to insert random data.

29. A transmission apparatus according to claim 27 wherein said additional data inserted by said additional-data-inserting means into said data blocks selected at random is unencrypted data.

30. A transmission apparatus according to claim 27 wherein said additional data inserted by said additional-data-inserting means into said data blocks selected at random is unencrypted data and encrypted data.

31. A transmission apparatus according to claim 28 wherein said random-data-inserting means inserts random data into an invalid-data portion in each of some data blocks.

32. A transmission apparatus according to claim 27 wherein said transmission means transmits said sequence of data blocks to other equipment by radio or wire communication.

33. A transmission apparatus according to claim 27 wherein said transmission means transmits said sequence of data blocks as data to be recorded onto a recording medium.

34. A transmission method for encrypting a plurality of data blocks comprising main data and additional data and transmitting said encrypted data blocks, said transmission method comprising the steps of:

carrying out processing to insert additional data into data blocks selected at random among a sequence of said data blocks composing a stream of said main data;

encrypting said sequence of data blocks after said processing to insert additional data; and

transmitting said sequence of encrypted data blocks.

35. A transmission method according to claim 34, said transmission method further including the step of carrying out processing to insert random data into some of said data blocks, whereby said sequence of data blocks is encrypted after said step of carrying out processing to insert additional data and said step of carrying out processing to insert random data.

36. A recording medium for recording at least an encrypted program wherein, before being recorded into said recording medium, said program is encrypted after

random data is added to the beginning and/or the end of said program.

37. A recording medium for recording packet-converted and then encrypted digital data wherein, before being recorded into said recording medium, said packet-converted data is encrypted after random data is added to part of said packet-converted data.

38. A recording medium for recording a plurality of encrypted data blocks comprising main data and additional data wherein, before being recorded into said recording medium, said encrypted data blocks are obtained by inserting additional data into data blocks selected at random among a sequence of data blocks composing a stream of said main data and by encrypting said sequence of data blocks including said additional data.

39. A recording medium according to claim 38 wherein, after said additional data is added, random data is inserted into some data blocks of said sequence of data blocks before encrypting said sequence of data blocks including said random data.

40. A recording medium according to claim 38 wherein said additional data inserted into data blocks selected at random is unencrypted data.

41. A recording medium according to claim 38 wherein

~~said additional data inserted into data blocks selected
at random is encrypted data and unencrypted data.~~